

REMARKS

Claims 1-41 are pending in this application. Claims 1, 8, 18, 26, 30 and 39 are independent claims. Reconsideration and allowance of this application are respectfully requested.

Allowable Subject Matter

Applicant appreciates that claims 8-38 and 40 are allowed; and that claims 3-7 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the features of the base claim and any intervening claims. Applicant notes that these claims are allowable in their own right, and not simply for the reasons set forth in the Office Action. Further, Applicant respectfully submits that claims 1, 2, 39 and 40 are also allowable in view of the following remarks.

Example Embodiments

Example embodiments are directed to a semiconductor memory device and methods of operating the device. The device 100 may include an oscillator circuit 170 for generating an oscillation signal that is varied based on mode of operation, and a word line enable circuit 190 for generating a word line enable signal in response to the oscillation signal. The device may also include a controlled circuit 150, 160 to control the oscillator circuit 170 and the word line enable circuit 190, so as to control a pulse of the word line enable signal and period of the oscillation signal, based on a change in operation mode of the device. By such configuration, there may be a reduction in the potential for loss of data stored in memory cells when the semiconductor device is controlling a self-refresh operation, for example, while in a stand-by mode.

Claim Rejections – 35 USC § 102

Claims 1, 2, 39 and 41 are rejected under 35 USC § 102(b) as being anticipated by Park et al. (hereinafter “Park”), U.S. Patent 5,367,489. This rejection is respectfully traversed.

Applicant submits that Park fails to disclose or suggest, *inter alia*, “a word line enable circuit for generating a word line enable signal in response to the oscillation signal”, as recited in claim 1.

The Examiner allegedly asserted that col. 3, lines 39-48 of Park teaches “a word line enable signal in response to the oscillation signal”.¹ Applicant respectfully disagrees. While Park may disclose a word line enable signal (See Figure 1C), it is submitted that Park is completely silent that the enable signal is in response to any oscillation signal. The passage directed by the Examiner in col. 3, lines 39-48 merely discloses that a voltage pump which includes an input circuit for responding to pulses from the oscillator. Thus, Applicant submits that “a voltage pump” as taught in Park is not a word line enable circuit.

Further, Applicant submits that Park fails to disclose or suggest “a control circuit for controlling the oscillator circuit and a word line enable circuit so that a pulse width of the word line enable signal is widened as operation mode of the memory device changes from an active mode to a stand-by mode”, as recited in claim 1.

The Examiner allegedly asserted in the Office Action that col. 2, lines 49-52 teaches the pulse width of the word line enable signal is widened.² However, Applicant has read the entire passage and cannot determine where or how widening the pulse width of the word line enable signal is taught. Park merely discloses varying the voltage level V_{pp} and V_{cc} as the chip changes its state from operation mode to stand-by mode³ (e.g., voltage level does not equate to pulse width).

Moreover, Park cannot be used to sustain an obviousness rejection because Park teaches the oscillator signal OSC and nodes N1 and N2 are fixed pulse width (See FIG. 3B). Accordingly, Applicant submits that none of the signals in Park teach or suggest affecting the word line circuit having a widened pulse width as the operation mode of the memory device changes.

Because Park fails to disclose each and every feature of the claimed invention, it cannot provide a basis for rejection under 35 USC § 102.

¹ See Office Action, page 3, first paragraph.

² See Office Action, page 3, second paragraph.

³ Park, col. 5, line 43 – col. 6, line 3.

Claim 39 is allowable for the several reasons discussed above with regard to claim 1. Claims 2 and 40 are also allowable by virtue of their dependency on either independent claims 1 or 40, and for features recited therein. Reconsideration and withdrawal of the rejections are respectfully requested.

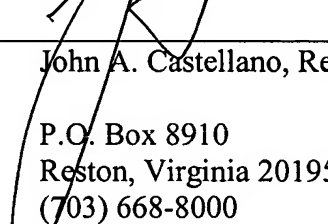
CONCLUSION

In view of the above, Applicant earnestly solicits reconsideration and allowance of all of the pending claims.


Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,
HARNES, DICKEY, & PIERCE, P.L.C.

By: 

John A. Castellano, Reg. No. 35,094
P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000


JAC/DJC:ald